

## ABSTRACT

A system for sensing respiratory pressure includes a portable pressure transducer configured to be carried by or proximate to a respiratory conduit, such as a breathing circuit or a nasal canula. The portable pressure transducer may removably couple with a pneumotach, in the form of an airway adapter, disposed along the respiratory conduit. The pneumotach may include two pressure ports positioned at opposite sides of an obstruction, which partially blocks flow through a primary conduit of the pneumotach. Corresponding sample conduits of the portable pressure transducer removably couple with the pressure ports. The pressure ports may have sealing elements which are configured to seal against piercing members of the sample conduits upon introduction of the piercing members therethrough. Upon removal of the piercing members, the sealing elements substantially reseal. Methods for using the system are also disclosed.